STATE OF CALIFORNIA
EMERGENCY MEDICAL SERVICES AUTHORITY

AFTER ACTION REPORT ON THE DEPARTMENT RESPONSE TO THE WINTER FLOODS, JANUARY 1-29, 1997

AUGUST 1997
EMSA #397-01

AFTER ACTION REPORT ON THE DEPARTMENT RESPONSE TO THE WINTER FLOODS, JANUARY 1 -29, 1997

Prepared by:

Jeffrey L. Gidley
Disaster Medical Specialist
California Emergency Medical Services Authority

Jeffrey L. Rubin
Chief, Disaster Medical Division
California Emergency Medical Services Authority

~

Pete Wilson
Governor

Sandra R. Smoley, R.N.
Secretary, Health and Welfare Agency

Richard Watson
Interim Director
California Emergency Medical Services Authority

August 1997

TABLE OF CONTENTS

INTRODUCTION

Beginning late in December 1996, a series of warm storms hit Northern California. For the next week, warm rain fell, melting snow at high elevations and dropping as much as forty inches of rain in the mountains and foothills. The combination of rain runoff and snow melt caused rivers to rapidly reach capacity and foothill reservoirs to begin emergency releases. In response to this rush of water, the valley rivers rose and substantial pressure was placed on the levee system. Soon, the over taxed levee system began to fail, first in the more northern counties of Yuba, Colusa and Sutter and then spreading south to Sacramento, San Joaquin and Stanislaus. When the winter flooding was finally over, 42 of the states 58 counties had declared disasters, eight individuals lost their lives, tens of thousands were left homeless and millions of dollars were lost in property damage. Repair work will continue for months.

For the Emergency Medical Services Authority (EMSA), the 1997 winter floods were a unique medical disaster event. Past flood events in California have had almost no medical concerns that warranted state support. However, the flooding that occurred beginning in December 1996 and continuing into January 1997 resulted in significant evacuations displacing more than 140,000 individuals. Included within these numbers were patients from two acute care hospitals, five skilled nursing facilities, and an unknown number of board and care facilities and home health care patients. Many of these medically fragile individuals were relocated to temporary shelters established by the impacted county, the American Red Cross (ARC), or neighboring counties. None of these shelters were prepared to accommodate these individuals, and, as a result, in conjunction with county and ARC operations, the state found it necessary to provide supplemental medical personnel and supplies to support shelter operations for the first time due to a flood event.

This support was coordinated by EMSA in cooperation with the State Department of Health Services (DHS) as part of EMSA's responsibility for disaster response. During a state disaster, EMSA has the lead role for coordinating state level medical response and along with DHS provides support to the Governor's Office of Emergency Services (OES) to set priorities, policy and direction for the medical and health response at the state level. Additionally, EMSA and DHS provide resources to impacted counties from state medical and health resources and through the state medical mutual aid system. In response to this disaster, EMSA implemented its disaster response plan, providing emergency management personnel to the OES Regional Emergency Operation Centers (REOC) and, policy and direction for the state medical response and coordinated medical resources for use in impacted counties in cooperation with the DHS through the Joint Emergency Operations Center (JEOC).

Generalized Description of State Medical and Health Disaster Response System

Within California, disaster planning and operations are based on the concepts of local operational control during disasters and mutual aid to provide the additional resources necessary to augment disaster response organizations in the disaster area. The entity designated to coordinate disaster response resources within the geographical boundaries of a county is the Operational Area (OA), which consists of all political entities of a County. The OA is responsible for coordinating local response programs, for utilizing all available local resources, for instituting mutual aid requests with other Counties within the local mutual aid region and for instituting and validating State resource requests.

Within the OA, an Operational Area Disaster Medical Coordinator (OADMHC) is responsible for medical and health response. Normally this position is appointed by the County Public Health Officer or Board of Supervisors and will staff the medical and health branch in the OA EOC. Unlike fire and law, however, there is no designated governmental structure in each County responsible for medical disaster planning and operations. In many cases, these requirements are tasked to the agency responsible for emergency medical services for the County under the direction of the Public Health Officer. OES organizes the OAs into six mutual aid regions to provide mutual aid support and a regional emergency response system. At the regional level, EMSA and DHS jointly appoint a Regional Disaster Medical and Health Coordinator (RDMHC) whose responsibilities include supporting the mutual aid requests of the OADMHC for disaster response within the region and providing mutual aid support to other areas of the state in support of the state medical response system. The RDMHC also serves as an information source to the state medical and health response system.

Medical and health response planning at the state level is accomplished by several departments within the State Health and Welfare Agency and coordinated with plans prepared by the Governor's Office of Emergency Services. The medical response relies on mutual aid from the unaffected mutual aid regions within the State and state resources including medical personnel and equipment from DHS, state organized Disaster Medical Assistance Teams (DMAT), and the California National Guard. Additionally, the state contracts with medical suppliers and other private and public medical providers to supply medical resources as needed.

EMSA is responsible to coordinate the procurement of medical resources, and in conjunction with DHS runs the JEOC, a combined EOC whose purpose is to set state medical and health policy and procedures, procure medical personnel through the Regional Medical Mutual Aid system and supplies and equipment through agreements with large medical supply vendors throughout the State. Additionally, state medical and health personnel run the Medical and Health Branch in each activated OES REOC. The Branch has the responsibility to coordinate the medical and health response with other emergency response functions, coordinate with other state agencies such as the California National Guard for support to the medical and health

response, and insure that the medical and health response supports the overall state response priorities as established by OES.

Summary of Medical and Health Operations, Winter Floods 1997

The Governor's Office of Emergency Services (OES) Inland Regional Emergency Operations Center (REOC) Medical/Health Branch was activated on January 1, 1997 at 1400 hours. The Medical/Health Branch at the Inland REOC was staffed by disaster personnel from EMSA and DHS. Medical/Health Branch staffing was not required at the Coastal REOC except for DHS water personnel sent to coordinate with the Utilities Branch. As a consequence, personnel at the Inland REOC assumed responsibility for coordinating medical and health response within the Coastal region as well. Initially, staff surveyed both the Inland region and the Coastal region through the RDMHC in both regions and with contacts to impacted county OES personnel. Initial medical and health priorities established at the REOC for each region were to monitor and assess the medical and health situation in impacted counties and to provide advice and technical guidance to the OADMHCs in the impacted counties and the RDMHC.

On January 1, due to the rising Feather River and its weakened levee system, Yuba City and Marysville in Sutter and Yuba Counties declared a mandatory evacuation. The Medical/Health Branch coordinated evacuation support from Marysville and Yuba City through the RDMHCs in Mutual Aid Regions III and IV to support the voluntary evacuation of Rideout Hospital in Marysville and Fremont Hospital in Yuba City. Critical patients were evacuated from Rideout and Fremont to hospitals in Sacramento County as arranged by the RDMHC in Region IV. Other patients were sheltered in place at Rideout Hospital on upper floors. Concurrently, five convalescent facilities in Marysville, Yuba City and Live Oak were evacuated to shelters. Region III RDMHC coordinated with the affected counties' medical and health representatives to insure adequate coverage in shelters. At this stage, local health officials did not express a need for outside support for medical and health needs of the shelter populations.

The Medical/Health Branch, including representatives from EMSA and DHS, continued to manage the State medical support from the REOC through January 2, 1997. By 1600 hours, the Medical/Health Branch staff requested EMSA and DHS management to open the JEOC at 0700 hours on January 3. This decision was based on the large number of displaced persons in shelters and especially the number of reported medically fragile patients who might require additional health services. REOC Medical/Health Branch continued to monitor the situation throughout the night.

The first request for shelter medical support from Sutter and Colusa Counties occurred at 0300 hours on January 3 and the JEOC was opened to support this request at 0430 hours. The JEOC then assumed the primary management and coordination role for the State's medical and health response to the emergency. Additional support staff from EMSA and DHS were provided to

support medical and health policy, planning and operations. Technical expertise was made available to address public and environmental health concerns as well as support medical logistics and operational requirements. The REOC Medical/Health Branch operated as the liaison for the JEOC and as the medical and health staff to OES management at the REOC.

The JEOC began establishing priorities and requesting mutual aid support from DHS nursing staff. The JEOC was able to provide approximately one dozen nurses between Colusa and Sutter Counties by the evening. In addition, on January 4 at 1430 hours, the JEOC instituted a program of conference calls. These conference calls continued daily until January 13 and included a representative from each of the impacted counties, the mutual aid region RDMHCs and other medical and health providers. These calls were used to determine status of the impacted areas and to provide updates to the local responders on the state response.

During the day of January 4, information made available through the REOC Care and Shelter Branch began to develop a picture of deteriorating conditions in the shelters within Yuba County. EMSA staff in conjunction with Sierra-Sacramento Valley EMS toured major shelters within Colusa, Sutter and Yuba Counties to assess medical and health needs. In addition to recommendations made by the assessment team and following repeated discussions with the Health Officer in Yuba County, a request for medical personnel and supplies was made to the JEOC at 1930 hours on January 4. This request was managed by the JEOC staff during the evening of January 4 and supplies and personnel were identified for delivery on January 5. During the evening, new requirements were received for medical and EOC management support personnel from Colusa and Sutter Counties. A decision was made to provide local EMS agency management staff and DHS public health experts to Colusa and Yuba County Emergency Operations Centers. A request was also made for federal activation of three California Disaster Medical Assistance Teams (DMATs). Coordination was made by the JEOC with the U.S. Public Health Service, Region IX in San Francisco and the National Disaster Medical System (NDMS) in Rockville, Maryland. Federal and State Coordinating Officers approved the requested support. The Medical/Health Branch coordinated the transportation and other state support requirements through the REOC. The DMAT support for the shelters in Yuba County was scheduled to be in place by midday on the January 5.

However, at midday on January 5, the Yuba County Health Officer requested that the mission be canceled because the shelter situation was improving due to population levels substantially decreasing. The JEOC continued to provide medical personnel to shelters through the mutual aid system and delivered medical supplies to Yuba County.

On January 6, the medical situation in the shelters substantially improved. Nursing and medical personnel deployed in the impacted areas were deactivated and began returning home throughout the day. In support of this event, between January 3 and January 6, the JEOC made 78 physicians and nurses available to support shelter operations. These personnel came from DHS

and counties within Mutual Aid Regions II and IV, including Contra Costa, Sacramento, Yolo and San Joaquin Counties. The Medical/Health Branch at the REOC was closed at 1330 hours. The JEOC remained open until January 13 with reduced staffing to monitor the medical and health situation. Contingency plans were developed to support expansion of the JEOC and the REOC Medical/Health Branch if conditions should warrant.

This stabilized situation remained in effect until a second series of warm storms in late January threatened a second round of severe flooding. In response, the Authority held planning meetings with threatened counties, supporting state agencies and non-governmental organizations to overcome the problems associated with sheltering medically fragile individuals during the New Year's flooding. These meetings lead to procedures to find suitable residences in other licensed facilities outside of shelters for as many of the medically fragile as possible and to provide medical supplies and staffing to shelters as needed. As the storms advanced, the Authority went on a 24-hour schedule at both the Inland REOC and the Coastal REOC beginning January 24 and continuing through January 26. Fortunately, these storms moved north and did not have a substantial impact on the previously flooded areas in Northern California.

Findings, Discussion and Recommendations

Overall, the medical and health response to this emergency went well. During the course of both events, the EMS Authority met its statutory requirements of providing lead for state medical operations. By the end of January, over 2/3 of the department's staff had been committed to the flood response effort. Medical and health assessments were made at all SEMS levels during the event based on information available. Needs were expressed and the mutual aid and logistics systems were able to respond to the expressed needs. Although there was need for improvement especially in the area of support to the medically fragile in shelters, these problem areas were identified during the response in the early part of January and plans were made to improve the response due to the threatened storm at the end of January. Specific findings from the EMSA response to the flood event are discussed below. The findings, discussion and recommendations are grouped by the SEMS function with responsibility for implementing the recommendation.

Management:

1. Assessment teams from EMSA, DHS and a local EMS agency provided meaningful and timely information on local medical and health conditions.

Discussion: When the shelters in Yuba and Sutter Counties were initially opened there was a significant amount of conflicting information concerning the medical and health status in the shelters. Information obtained at the JEOC indicated that the shelters were either full of evacuees in dire medical condition without proper care and medical equipment or that the situation was stable and no one was in any danger. Assessment teams from EMSA, DHS and a

local EMS Agency visited shelters in the impacted area in an attempt to develop a clearer understanding of the actual medical and health conditions within the shelter system. These teams were able to develop an understanding of the conditions in the shelter and what resources were needed. Information from these teams was used to provide advanced planning, although immediate support needs were based on the request of the health officer from the impacted county.

Recommendation: With the concurrence of the local medical and health responders and at their request, EMSA and DHS should form assessment teams from public health and emergency medical response personnel familiar with emergency operations. These teams would be used to assess medical and health conditions within the impacted area in the event of a major disaster and provide the information necessary to prioritize the response and meet the needs of local responders as quickly as possible.

2. The JEOC, when established as a combined departmental operations center (DOC), provided a more coordinated response and minimized the need for medical and health personnel at the REOC, however, procedures have not been modified to detail activation of the new organization, staff interaction and coordination.

Discussion: In response to this disaster, DHS and EMSA emergency management personnel decided to implement a combined medical operations center. The possibility of instituting a combined department level operations center had been discussed previously because of the severe limitation on space and support resources at the OES REOCs. Current plans had called for the departments to staff the Medical/Health branch at a REOC with the lead role depending upon the situation. At the Medical/Health branch, the medical and health priorities would be set, resource requirements would be coordinated and support from other mutual aid regions and state agencies would be arranged. However, the space and logistics support requirements to support these functions was substantially greater than could be provided at any of the current OES REOCs.

Consequently, during this event, EMSA and DHS emergency management personnel elected to test the concept of a combined DOC using the JEOC as the support structure for combined operations. The JEOC had been a DHS operations center with additional requirements to support EMSA operations by obtaining medical personnel and supply resources during a disaster. For this event, the JEOC staff was expanded to included EMSA personnel and tasked to set medical and health priorities, to plan medical and health operations and to provide medical and health resources to the impacted area. However, procedures to operate the expanded JEOC were not in place and staff were not prepared to accomplish their expanded roles without substantial guidance.

Recommendation: Procedures for JEOC operations as a unified medical and health operations center need to be finalized and combined training needs to be conducted.

3. The EMSA Department Operations Center (EMSA DOC) was needed to support EMSA staff.

Discussion: The JEOC was instituted to improve overall coordination of the medical and health response from the state level. This organization replaced several EMSA response organizations including the EMSA DOC. However, the personnel at the JEOC were required to use substantial time to coordinate internal staffing concerns as well as provide agency reports. These internal requirements had a significant impact on the overall work load of the JEOC. Consequently, during the event, a system was developed to reinstate a portion of the EMSA DOC and have that organization provide personnel, time keeping support, EMSA personnel logistics support and Health and Welfare Agency reports in support of EMSA and JEOC operations.

Recommendation: Continue EMSA DOC in current form to support JEOC and EMSA requirements.

4. Information flow to the EMSA DOC and the Health and Welfare Agency was not efficient.

Discussion: The EMSA has a responsibility to provide information to the Health and Welfare Agency concerning EMSA activities in support of disaster operations. Information considered vital includes the overall situation as it affects medical and health operations and current and planned activities by EMSA in support of medical and health operations. Currently, information is gathered through the Medical/Health branch at the REOC, the appropriate RDMHC and JEOC operations. This information is available to medical and health and OES planners at all SEMS levels, if they have access, through the Regional Information Management System (RIMS), a computer-based management system designed by OES using Lotus Notes software as an operating system. RIMS allows the free flow of information through a series of interconnected local area networks (LANS) with a dial up modem capability. However, neither the EMSA DOC nor the Health and Welfare Agency have access to this system. This means that information must be gathered, processed and provided to the EMSA DOC and Health and Welfare Agency in a separate format. This process is inefficient because it requires medical and health emergency management personnel to enter and process data twice, first into RIMS and second for EMSA operations. This inefficiency means that information is not as timely as is expected or needed.

Recommendation: Both the Health and Welfare Agency and the EMSA should have RIMS capability. This capability should preferably be through a separate LAN maintained by EMSA and interconnected with the other RIMS servers through an internet connection with the OES main server and the DHS emergency management server.

5. The medical/health branch at the REOC does not have effective input into the priority setting procedures of the REOC management.

Discussion: EMSA and DHS provide staff for the Medical/Health Branch at the REOC with the senior EMSA representative serving as chief of the branch when there are primarily medical concerns. The senior EMSA representative also serves as a liaison officer for the department and reports directly to the REOC manager. The Medical/Health Branch works within the Operations Section and reports to the chief of that section. Within the Operations Section, the Medical/Health Branch is responsible for implementing the medical and health action plan, determining the current medical and health situation, obtaining resources and coordinating with supporting agencies and supported operational areas. The Medical/Health Branch provides its priorities for the REOC Action Plan to the Operations Section Chief. These priorities, along with other branch priorities are submitted to the REOC Director and Section Chiefs during the action planning meeting which is coordinated by the Planning and Intelligence Chief. Priorities for the next operational period are agreed upon at the action planning meeting, and attendees are responsible to brief their branch chiefs upon completion of the action planning meeting.

Although the process seems to provide adequate input, under most circumstances, the Medical/Health Branch is effectively excluded from input into the decision making process. For the most part, the Medical/Health Branch personnel have no actual means of providing input into the planning process and have no voice in establishing priorities. This lack of input is due to the Operations Chief spending a substantial amount of time in management meetings with little time for effective communications with section staff personnel.

Recommendation: Within SEMS, and if warranted by the size and complexity of the disaster response, require a deputy chief position within the Operations and Planning and Intelligence Sections. These individuals would be tasked with running each section and approving and arbitrating competing priorities among different branches. The deputy would be present at all times to insure effective coordination among branches and between the two sections.

6. The operational area medical and health management system was not fully prepared to coordinate and manage the medical and health response.

Discussion: During the disaster it became clear that the medical and health management system at the local and operational area level was not fully integrated into the SEMS process at several of the most impacted counties. Some of the local medical and health responders did not know who to contact for medical and health support and not all medical and health staff at the operational area level were used properly within the County EOC. At the local response level, especially within the shelters, the medical and health response system was not fully understood by support staff. This lack of knowledge in some cases led to contradictory information about

the medical requirements to support the shelter system and a misconception of what medical resources could be made available.

Further, there was a lack of knowledge on the part of some public health officers at the county level, the EMS staff at the county level and the County OES personnel concerning the way in which the medical and health response would be managed within the County. For example, in one county, the public health officer and EMS director were assigned to the Mass Care and Shelter Branch by the OES manager while an ambulance paramedic ran the medical/health branch, while in another county, the public health officer was not even allowed to participate in County EOC activities. Finally, in some instances, the local medical and health personnel did not take advantage of regional planning already done by the RDMHC. These incidents show a lack of preparation and training on the part of the County management and medical and health personnel.

Recommendation: DHS and EMSA should institute a training program for public health officers to improve overall understanding of disaster operations and the requirements of the public health officer and other medical and health personnel within the County structure. EMSA and DHS should coordinate with State OES to improve the relationship between County medical and health personnel and County OES. State OES can assist EMSA and DHS by encouraging County OES personnel to work with medical/health personnel in the County to develop operational plans and to provide working space and operational support to the designated Operational Area Medical/Health Coordinator.

7. The conference call system provided an excellent means to disseminate and exchange information, but became cumbersome with no control on participant numbers.

Discussion: The conference call system that has been successful in previous events was instituted for this disaster as well. As in the past, it proved to be an invaluable aid in coordinating among the various levels of responders and developing an understanding of the current medical and health situation. However, so many people needed to participate that the conference calls could take up to two hours, with a substantial amount of time used simply taking roll call.

Recommendation: Continue the conference call system, but limit number of participants by either restricting participant numbers through invitations or limiting the participants to those directly affected by and/or supporting the incident. Conference calls should be recorded and proceedings should be made available to other interested individuals as a means to limit number of participants.

8. EMSA public service announcements were not fully effective in preparing individuals for evacuation.

Discussion: EMSA has a responsibility to provide medical information to the public during a disaster. This information generally takes the form of public service announcements which inform the public about specific medical hazards to be aware of and special preparations needed for evacuation. EMSA relies on other agencies, such as the Red Cross and the State OES, to issue EMSA public service announcements. During this event EMSA made public announcements available to these agencies concerning medical aspects of evacuation; however, these announcements did not appear to be totally effective because numerous people arrived at shelters without medications or medical equipment necessary for their survival.

Recommendations: EMSA should work with the PIO section at DHS and the Health and Welfare Agency (HWA) to improve the public service announcement process. Additionally, in conjunction with DHS and HWA, EMSA should develop a method to improve overall media understanding of the medical issues involved.

Operations:

1. During an event with large numbers of evacuations, there is a need for a close relationship between mass care and shelter and medical and health operations because of the medical needs of evacuees.

Discussion: When large numbers of people are displaced and temporary shelters are developed, there is an increased need for medical and health support in the shelters that is not provided by the mass care and shelter emergency support function. This increased medical need is especially true when large numbers of medically fragile are evacuated to shelters. With the increase in home health care, board and care, and group homes, the need for medical and health support will only increase in the future. However, with the increased numbers of homeless individuals, there is concern that establishing significant free public services within a temporary shelter will have the effect of making the shelter permanent.

Recommendation: EMSA, DHS and OES have developed a working group with the Department of Social Services (DSS) and other supporting departments in the HWA to address the issue of medical needs of an evacuated population during a disaster.

2. The mutual aid system was bypassed in Region III for ambulance support.

Discussion: During the evacuation of Rideout and Fremont Hospitals in Yuba City and Marysville, the local ambulance provider and the County public health officer elected to bypass the Regional RDMHC mutual aid system and make arrangements with ambulance providers that

were not coordinated through the state mutual aid system. The result of this uncoordinated operation was that for a period of twelve hours, ambulance coverage was negatively impacted in the Sacramento and San Joaquin Valleys from Marysville as far south as Modesto. Fortunately, no harm occurred; however, other County coordinators and RDMHCs lost oversight and control of available assets. This situation occurred because of a lack of knowledge and confidence in the system on the part of the participants.

Compliance with RDMHC procedures is voluntary on the part of operational area and local response personnel who are private local providers. Currently, only Mutual Aid Region VI has a signed agreement which provides a means for private as well as local public medical response assets to be used to support out of county medical and health disaster response, although Region I and VI are developing a joint agreement. The state can compel local private responders to follow the state's operational procedures by exercising the Governor's ultimate authority to direct compliance as proscribed in the California Emergency Services Act. However, under most circumstances this authority will not be used and the state can best improve the medical and health disaster response system through our leadership role in disaster medical preparation by continuing efforts to establish a statewide system to include all private local responders.

Recommendation: State guidelines need to be further developed for operational area personnel which clarify the medical and health assistance system procedures and the need to follow established protocols. These guidelines would establish a standard that could be used to train EMS personnel and public health officers and would provide procedures during disaster operations.

3. The decision to shelter hospital patients in place would not have adequately protected patients if flooding had occurred.

Discussion: On January 1, 1997, Marysville and Yuba City were placed in a mandatory evacuation status. The Rideout and Fremont Hospital group in response elected to evacuate their most critically ill patients and to move the remainder to higher floors. In addition, the group decided to take nursing facility patients into the hospital from nursing facilities that were evacuating. A total of twenty-five patients were moved to facilities in Sacramento, the rest were sheltered in place. If there had been a flood in the area, however, the hospitals would have been isolated with no utilities or food and water. Backup generators would not have worked because these are located at or below ground level. Fuel would not have been available in any case because these tanks are located underground. Food and water would have had to have been delivered by boat and emergency managers would have been faced with deciding whether to attempt a dangerous rescue by boat or continue to try to support a hospital population in an unlit, non-heated building.

Hospital managers were able to make this decision because mandatory evacuation does not really mean everyone has to leave an area, only that after having left, no one can reenter the area. Further, there is no state guidance or regulation which specifically defines a hospital's requirements for evacuation and continuing and restoring hospital operations.

Recommendation: DHS Licensing and Certification should develop policy to establish criteria for hospitals to evacuate facilities, define terms and to set conditions that hospitals must meet to return to normal operations. Hospitals, convalescent centers, home health agencies and other medical and health providers should be required to develop disaster evacuation plans and to have supporting individual patient evacuation plans which can be coordinated with supporting local governmental response agencies.

4. The ARC does not provide medical and health support in shelters and the shelters were not prepared to support medically fragile individuals.

Discussion: The ARC does not provide medical care, other than first aid, at ARC shelters. During this emergency, more than 1000 medically fragile individuals were evacuated from nursing homes, board and care facilities and home health care living situations to shelters. These shelters were not prepared to support these personnel. The shelters did not have any pharmaceuticals or medical equipment and did not have the capability to prepare special meals. The problem was exacerbated when medical staff from evacuated facilities were not allowed by law enforcement officials to go back to their facilities to get supplies and equipment. Further, in many shelters, there was insufficient medical staff available to adequately meet the needs of this special population.

Recommendation: The problem of medically fragile individuals in shelters can be approached in two complementary ways. The first is to decrease the number of the medically fragile going to shelters and the second is to provide medical personnel and supplies to support shelter operations. For the first, local OADMHCs, EMSA and DHS should develop plans with OES, the Department of Social Services and other state agencies to decrease the potential population of medically fragile in shelters. The decrease will be accomplished by establishing procedures for skilled nursing facilities and board and care homes to find temporary space in "like" facilities for their patients. For the second, EMSA and DHS should develop a list of state medical and health personnel and supply resources for immediate deployment in the event a shelter is opened where there is a request for support of a medically fragile population within the evacuated population.

Planning and Intelligence:

1. There was an inconsistent policy for information gathering requirements by the state JEOC and the regional RDMHC.

Discussion: During the disaster, both the RDMHC and the JEOC were contacting county and local medical and health personnel for information and updates on the medical and health situation. This situation occurred because state agencies are required by their directors to have direct contact with local response personnel and because of the evolution of the RDMHC from a mutual aid coordinator to a full fledged emergency response entity. Additionally, EMSA and DHS have not adequately defined the role of the RDMHC and its relationship to the state and local government.

Recommendation: A temporary solution was developed where the JEOC would be the primary source of information gathering and would coordinate information with the RDMHC as the mutual aid coordinator. However, a permanent agreement needs to be reached among the state agencies and the RDMHCs as to how information will be processed and who is responsible for management and oversight of state medical and health operations at the region and in support of the local medical and health response.

2. Operational areas are unaware of all of the health care facilities within their jurisdictions.

Discussion: During planning for the late January storms, OADMHCs and health officers in threatened counties were told to work with the skilled nursing facilities, board and care facilities and home health care agencies within their county to determine a procedure to evacuate the medically fragile to a location other than a shelter. For the most part, counties were unaware of what facilities were located in their counties. DHS Licensing and Certification and DSS Community Care Licensing were able to provide lists to each county.

Recommendation: Counties should periodically receive updated facilities lists from DHS and DSS. DHS and DSS should require as part of their licensing process a complete disaster plan for each facility which specifically addresses the issue of a wide spread disaster and mass evacuation from the impacted area.

Logistics:

1. Arrangements are not formalized to allow for rapid mobilization of medical supplies.

Discussion: During the disaster response several shelters had a need for medical supplies and pharmaceuticals to support the medically fragile. Local responders did not have access to required supplies through an established system and in one case turned to the state for assistance.

The JEOC was able to provide supplies, but did not have access to supplies for rapid deployment. Rather the state had to make *ad hoc* arrangements through a large hospital center to provide the needed supplies.

Recommendation: The state needs to continue to develop alternative means of providing supplies to the impacted area. The procedures should be rapid and provide means for reimbursement to the provider for medical supplies sent in support of local hospitals and medical providers required to support disaster operations.

Finance and Administration:

1. No agreements existed to handle reimbursement for deployed medical personnel.

Discussion: Currently there is no signed statewide medical assistance agreement covering medical and health support. The current system of medical aid relies on the California Master Mutual Aid agreement for justification to ask an unimpacted county for medical personnel and the largess of DHS to reimburse employers for time lost during deployment of medical personnel. During an emergency, the JEOC will contact the RDMHC from an unaffected regions and request medical staff. According to the California Master Mutual Aid agreement, this support should be provided free of charge to the requesting county by any signatory of the California Master Mutual Aid Agreement without expectation of reimbursement. However, most medical personnel are in the private sector and can not afford to deploy without pay in support of disaster operations. Additionally, even those personnel working for county health departments are not always able to deploy because decreases in County staff have left many Counties in a position where sending staff personnel would deplete County resources to the point where the County would be unable to meet its medical and health obligations to its populace. Consequently, in order to get medical personnel, DHS reimburses the supporting counties and private providers directly for personnel costs involved.

Currently, an eleven party medical aid cooperative assistance agreement is being developed in Southern Region. This agreement states that the requesting party is responsible for assuming cost for deployed medical personnel. Once reimbursement is made from the requesting County to the providing County, the requesting County could request reimbursement through the FEMA/OES Public Assistance Program, although such reimbursement may or may not occur. Such an agreement would, however, be considered outside the scope of the California Master Mutual Aid Agreement.

Recommendation: The Southern Region medical and health mutual cooperative assistance agreement should serve as a model for statewide implementation of a medical and health mutual assistance agreement.

2. DMAT activation required federal financial support and activation of the federal medical support unit delaying the activation decision and resulting in substantial cost when the mission was canceled.

Discussion: On January 4, staff at the JEOC, after a request by an impacted county for substantially more medical personnel to support shelter operations, decided that the medical situation had reached a point in the shelters that the medical mutual aid system could no longer provide sufficient staff. Consequently, a decision was made to activate three of the state's DMATs. However, because there were no state funds available to support this activation, the federal government was asked through the Public Health Service, Region IX and the Federal Emergency Management Agency, Region IX to approve and support the DMAT activation. This request was approved, but to support the DMATs, the National Disaster Medical System (NDMS) uses a 15 person Medical Support Unit (MSU). Once the decision was made to activate the DMATs, the MSU was mobilized and deployed beginning early on January 5. Less than 24 hours after requesting substantial numbers of medical personnel, the county management determined that these personnel were not needed after all and the DMAT activation was canceled. However, the activation process could not be stopped. DMAT personnel reported to their mobilization site and MSU personnel were already in route from Rockville, Maryland. Over all costs for this activation probably approached $25,000.

Recommendation: The state should have emergency funds available to use for the activation of DMATs. These funds would have allowed earlier activation of DMATs at substantially lower cost than through the federal system, because the state could have supported the DMATs during this activation with its own support personnel. OES should work with the Department of Finance to insure that funds are available to support this type of operation for future disasters.

EMSA should investigate the feasibility of a California MSU to provide logistic support to activated DMATs and should establish criteria for DMAT activation. Simultaneously with this approach, EMSA should explore the possibility of field logistics support from the California Department of Forestry or the California National Guard.